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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/667,717

09/22/2003

Ulrich Steegmuller

P2002,0783

9707

24131

7590

10/19/2005

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EXAMINER

LU, TONY W

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/667,717	STEEGMULLER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Tony Lu	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>09/22/03, 01/02/04</u> .  | 6) <input type="checkbox"/> Other: ____.                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5,8-10,13,14 and 15-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Zimmer et al US6873580.

With respect to claim 1, Zimmer et al disclose an optical sensing head for reading an optical data memory(52) comprising: a substrate(20) having a main surface extending along a first main plane; an edge-emitting laser component(30) for emitting laser radiation along an irradiation axis oriented essentially parallel to said first main plane, said edge-emitting laser component is configured on said main surface of said substrate; a deflection device(38) is configured on said main surface of said substrate, wherein said deflection device is for deflecting the laser radiation emitted by said edge-emitting laser component in a direction essentially perpendicular to said main surface; at least one signal detector(40) for sensing the laser radiation reflected by the optical data memory; and an optical element(14) for guiding the laser radiation deflected by the deflection device to the optical data memory and for guiding the laser radiation reflected by the

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optical data memory to said at least one signal detector, wherein the optical element is connected to said substrate.

With respect to claim 2, per the above discussion, Zimmer et al disclose said deflection device also serves as a supporting element for connecting said optical element to said substrate(fig.1).

With respect to claim 3, per the above discussion, Zimmer et al disclose said at least one signal detector is an irradiation-direction signal detector(40) configured on said main surface of said substrate wherein said irradiation-direction signal detector is configured on said irradiation axis of said edge-emitting laser component and said irradiation-direction signal detector is configured downstream of said deflection device with respect to a direction of irradiation of the laser radiation emitted by said edge-emitting laser component.

With respect to claim 4, per the above discussion, Zimmer et al disclose the optical sensing head further comprising: with respect to said edge-emitting laser component, an opposite direction signal detector(42) configured on said main surface of said substrate and on said irradiation axis of said edge-emitting laser component, wherein said opposite-direction signal detector is configured in a direction opposite to a direction of the laser radiation emitted by said edge-emitting laser component.

With respect to claims 5,8 and 9, per the above discussion, Zimmer et al disclose the optical sensing head further comprising: a supporting element(36) for connecting said optical element to said substrate, wherein said supporting element is configured between said edge-emitting laser component and said

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opposite direction signal detector. The supporting elements(34,36) are positioned to prevent stray light of the edge-emitting laser component(30) from reaching/receiving by the at least one signal detector(40,42).

With respect to claim 10, per the above discussion, Zimmer et al disclose said at least one signal detector is formed on said substrate.

With respect to claim 13, per the above discussion, Zimmer et al disclose the optical sensing head further comprising: a plurality of detectors(40,42,90,92) said plurality of detectors including said at least one signal detector; a plurality of supporting elements(34,36); said deflection device embodied as a deflection mirror(col.2); said plurality of supporting elements are configured beside said deflection mirror; said plurality of detectors are configured between said deflection mirror and said plurality of supporting elements; said optical element mounted on said plurality of supporting elements(see fig.1).

With respect to claim 14, per the above discussion, Zimmer et al disclose said substrate is formed by a silicon substrate(col.2).

With respect to claim 16, per the above discussion, Zimmer et al disclose said main surface of said substrate has an area  $10\text{mm}^2$  or less(note that Zimmer et al disclose the H in fig.1 can be as little as 3.25mm, wherein according to the ratio, the length and width of 20 is calculated to be 4.50mm and 1.16mm respectively which yield an area of  $5.22\text{mm}^2$ .)

With respect to claim 15, per the above discussion, Zimmer et al disclose the deflection device is produced from glass and nondetachably connected to said substrate(col.4 29-53)

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With respect to claim 17, per the above discussion, Zimmer et al disclose the optical sensing head further comprising at least one supporting element(36) connecting said optical element to said substrate.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6,7,11,12 and 18-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmer et al US6873580.

With respect to claims 6 and 7, per the above discussion, Zimmer et al disclose said supporting element has a surface facing said laser component, but fail to teach said surface of said supporting element has a metallic or dielectric mirrored layer.

Although Zimmer et al lack a clear teaching of said surface of said supporting element has a metallic or dielectric mirrored layer, using a metallic or dielectric mirrored layer in order to prevent unwanted light from passing said supporting element and avoiding the unwanted light from reaching said opposition-direction signal detector would have been obvious to one of ordinary skilled in the art.

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It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Zimmer et al with an inclusion of a metallic or dielectric mirrored layer on said surface of said supporting element in order to prevent unwanted light from reaching said opposite-direction signal detector and ensure a more accurate and proper performance of the optical sensing head.

Further citations in claim 7 would have been obvious for similar reasons set forth in the above discussion.

With respect to claim 11, per the above discussion, Zimmer et al fail to teach said at least one signal detector includes an array of PIN photodiodes formed in said substrate.

Although Zimmer et al lack a clear teaching of an array of PIN photodiodes formed in said substrate, selecting a specific type of photodiodes would have been obvious to one of ordinary skilled in order to provide a better detecting mean.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Zimmer et al with an inclusion of an array of PIN photodiodes in order to provide a fast response time and/or high sensitivity detecting mean for the optical sensing head.

With respect to claim 12, per the above discussion, note that Zimmer et al disclose two monitor detectors(90,92), integrated on the substrate, for controlling the intensity of said edge-emitting laser component.

Although Zimmer et al lack a clear teaching of said two monitor detectors are used for checking an irradiation power of said edge-emitting laser

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component, it would have been inherently included, however, if not, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Zimmer et al accordingly in order to provide a better adjustment of the intensity of said edge-emitting laser component by monitoring and/or checking the irradiation power of said edge-emitting laser component.

With respect to claims 18-24, per the above discussion, Zimmer et al's optical sensing head inherently performs the claimed method 18-24. Although Zimmer et al lack a clear inclusion of the specific manner of making/forming and/or installing components of the optical sensing head, selecting a specific manner material and/or size, shape of the components for providing similar expected performance of an optical sensing head would have been obvious to one of ordinary skill in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Zimmer et al accordingly in order to provide more convenience in installation and/or mounting for components of the optical sensing head without altering the basic performance of the optical sensing head.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure

1) Redmond et al US6914868 disclose an optical head comprising an edge-emitting laser component, a deflection device, two photodiode arrays, an optical element and an optical disk.



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2) Tajiri et al US6072607 disclose an optical pickup device comprising: a laser emitter, a deflection device, two detectors, an optical element and an optical disk.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Lu whose telephone number is 5712728448. The examiner can normally be reached on M-F 9:00am- 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 5712722444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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